

Amendments to the Drawings:

The attached sheets of drawings includes changes to FIG. 3. This sheet, which includes FIGS. 1-3, replaces the original sheet including FIGS. 1-3. In FIG. 3, the AMPLIFIER/PROCESSOR 38a, 38b blocks have been amended to show an amplifier, an analog-to-digital converter, and a processor within the blocks.

Attachments: (1) Replacement Sheet
(1) Annotated Sheet Showing Changes

REMARKS

After entry of the present amendments, claims 1-17, 19-27, 44, and 46-48 are pending in this application. Claims 1, 7-8, 11, 15, 17, 25, 44 and 48 have been amended. Please cancel claims 16 and 18. New claim 49 has been added.

Objections to Drawings

The drawings were objected to on the grounds that, according to the Office Action, they did not show every feature of the invention specified in the claims. Regarding the limitation of “a third filter for passing said second non-audio frequency signal” in claim 18, Applicants have canceled claim 18 without prejudice.

Regarding claims 23-24 requiring an analog-to-digital converter, this feature is now shown in amended FIG. 3 as the box labeled “ $\Sigma\Delta$.” No new matter is introduced by this amendment.

Regarding claims 44 and 46, Applicants respectfully traverse this rejection. An analog-to-digital converter 84 is shown in FIG. 8. Regarding claim 25 requiring a microcontroller for processing said non-audio frequency signal, said microcontroller providing functions for the operation of said hearing aid in response to said non-audio frequency signal,” this feature is shown in amended FIG. 3 as the box labeled “processor.” See page 10, lines 2-3 (“The amplifier/processors 38a, 38b may contain microcontrollers . . .”).

Claim Rejections under 35 U.S.C. § 112

Claim 18 was rejected under 35 U.S.C. § 112, ¶ 1 as reciting a feature allegedly not clearly supported by the specification. Although Applicants have canceled claim 18 without prejudice, Applicants respectfully traverse this rejection. For example, the feature of claim 18 is supported by at least page 7, lines 29-30: “The amplifiers 22, 28, 32, 38a, 38b may contain **additional filters** and employ non-linear signal processing (e.g., compression, companding) functions.”

Claim 11 was rejected under § 112, ¶ 2, for insufficient antecedent basis for the limitation “said amplified signal.” Claim 11 has been amended to overcome this rejection and is believed to comply with Section 112.

Claim Rejections Under 35 U.S.C. §§ 102, 103

Law on Obviousness

Obviousness requires that all the limitations of a claim must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974)). A *prima facie* case of obviousness requires three basic criteria.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.

M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)).

Although a prior art reference may be modified to meet the claimed limitation, the resultant modified reference is not obvious unless the prior art also suggests or motivates the desirability of the modification. *In re Mills*, 916 F.2d 680, 682, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990) (citing *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984)). Obviousness cannot "be established using hindsight or in view of the teachings or suggestions of the invention." *Ex parte Maguire*, 2002 WL 1801466, at *4 (Bd. Pat. App. & Inter. 2002) (quoting *Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.*, 73 F.3d 1085, 1087, 37 U.S.P.Q.2d 1237, 1239 (Fed. Cir. 1995), *cert. denied*, 519 U.S. 822 (1996)) (Appendix G). Further, the proposed modification cannot render the prior art "unsatisfactory for its intended purpose" nor can it "change the principle of operation" of a reference. M.P.E.P. § 2143.01 (citing *In re Gordon*, 733 F.2d at 902, 221 U.S.P.Q. at 1127 and *In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. 349, 352 (C.C.P.A. 1959)).

Additionally, it is rarely appropriate for an Examiner to rely on common knowledge or well-known prior art not supported by documentary evidence, when an application is under final rejection. M.P.E.P. § 2144.03. An Examiner can generally only rely on unsupported common knowledge or well-known prior art when the facts asserted are "capable of instant and unquestionable demonstration as being well-known." *Id.* (citing *In re Ahlert*, 424 F.2d 1088,

1091, 165 U.S.P.Q 418, 420 (C.C.P.A. 1970)). Further, “[i]t is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based.” *Id.* (citing *In re Zurko*, 258 F.3d 1379, 1386, 59 U.S.P.Q.2d 1693, 1697 (Fed. Cir. 2001) and *In re Ahlert*, 424 F.2d at 1092, 165 U.S.P.Q at 421).

Claims 1-3 and 8-10 were rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent No. 6, 603,860 (Taenzer et al). The Office Action asserts that Taenzer et al. discloses a first filter integrated onto an integrated circuit with a first amplifier. Applicants respectfully disagree. Nowhere does Taenzer teach or suggest that the magnetic-to-acoustic device 100 includes an integrated circuit having a filter and an amplifier. FIG. 3 is characterized as a “circuit diagram,” col. 5, l. 41, which actually suggests that the items 202, 206, etc. are separate components of a circuit. Indeed, if FIG. 3 were to depict an integrated circuit, then the pickup coil 200 and receiver 214 would also have to be included in the integrated circuit. For at least this reason, claims 1-3 and 8-10 are believed to be patentable over Taenzer.

Claim 1 has been amended to call for, *inter alia*, a voltage amplifier having a high input impedance, a first filter that sets the frequency response of said integrated telecoil system, where the frequency response of said integrated telecoil system is independent of the inductance and resistance of said telecoil. Claim 8 has been amended to call for, *inter alia*, providing said electrical signals to a high impedance input of a voltage amplifier, amplifying in said voltage amplifier said electrical signals to produce first amplified signals, wherein said filtering includes setting the frequency response of said telecoil in said audio frequency range, said frequency response being independent of the inductance and resistance of said telecoil.

Taenzer et al. does not teach or suggest these limitations. Applicants note that, for example, Taenzer discloses that the “**amplifier 202** is preferentially configured to correct the frequency response of the pickup coil 200 so that a flat characteristic is achieved across the entire frequency range of interest.” Col. 5, ll. 48-51 (emphasis added).

Applicants’ specification explained that existing low-frequency telecoils having integral amplifiers use an amplifier in a feedback configuration, which forms a low-impedance current input for the telecoil. As such, the frequency response is determined primarily by the inductance and resistance of the telecoil. Because the frequency response and gain of the telecoil transfer function depend on the same telecoil parameters, it is difficult to set both the gain and the desired frequency response of the amplified telecoil system at the same time. See page 3, ll. 20-31.

An embodiment of Applicants' invention overcomes this difficulty. An integrated telecoil amplifier includes a high input impedance voltage amplifier, which together with a filter, shapes the telecoil transfer function in the audio frequency range independently of the inductance and resistance of the telecoil. Thus, *any* inductive telecoil can be coupled to the input of the integrated telecoil amplifier without modifying the frequency response of the system in the audio frequency range. The desired frequency response is set by the filter and is not influenced by the inductance or resistance of the telecoil. *See* page 5, l. 27 to p. 6, l. 3 (*see also* p. 9, ll. 29-32).

None of the applied references, alone or in combination, teaches or suggests an integrated circuit having a voltage amplifier and a filter that sets the frequency response of an integrated telecoil system, the frequency response being independent of the inductance or the resistance of the telecoil. For at least the foregoing reasons, all pending claims are believed to be patentable over Taenzer *et al.* Some of the rejected claims are independently patentable over the applied references, however, Applicants believe that the failure of Taenzer *et al.* to disclose or suggest an integrated circuit having a voltage amplifier and a filter that sets the frequency response of an integrated telecoil system, the frequency response being independent of the inductance or the resistance of the telecoil, sufficiently renders all claims rejected based on Taenzer patentable. There is no teaching or suggestion found in any of the cited references to modify or combine the references to produce an integrated circuit as claimed.

Regarding claim 27, the Office Action rejected this claim on the basis that center-tapped telecoil is very well known in the art and commercially available. Taenzer does not disclose a center-tapped telecoil. To the extent that the rejection is based on common knowledge or well-known prior art, the Examiner must produce authority or substantial evidence to support the rationale that providing a center-tapped telecoil with an integrated circuit as claimed would have been obvious to a skilled artisan. Just because center-tapped telecoils individually may be well known in the art, there has been shown no suggestion for the desirability of combining a center-tapped telecoil with an amplifier and filter integrated onto an IC as claimed. Without such a suggestion, the claims are not obvious. Thus, claim 27 is believed to be patentable over Taenzer in view of Hueber.

Regarding claim 26, it was rejected on the basis that a center-tapped telecoil is well known, however, claim 26 does not recite a center-tapped telecoil. For at least this additional

reason, claim 26 is believed to be patentable over Taenzer in view of Hueber. Claim 7, 14, and 15 as amended are believed to be patentable for at least the same reason.

Regarding claim 44 as amended, neither Schneider nor Hough teaches or suggests a control band frequency output representative of a frequency above the audio frequency range. In Schneider, for example, a digital hearing aid is programmed using a program encoded in the audio band (20 Hz – 20 kHz). *See* Abstract. Moreover, Schneider does not teach or suggest a control band frequency output that is distinct from an audio frequency band output. Regarding claims 46-47, Schneider does not teach or suggest an A/D converter operating at a high rate to gather high-frequency signals. In fact, Schneider teaches away from such a converter, see for example, the Abstract. For at least the foregoing reasons, claims 44 and 46-47 are believed to be patentable over Schneider in view of Hough.

Regarding claim 48 as amended, neither Schneider nor Hough teaches or discloses a hybrid circuit including at least one integrated circuit placed on a common miniature device that fits within a hearing aid, said integrated circuit having a voltage amplifier for amplifying said electrical output signal and at least one filter for passing said audio frequency signal, said at least one filter setting the frequency response of said telecoil system, said frequency response being independent of said inductance and said resistance of said telecoil.

Conclusion

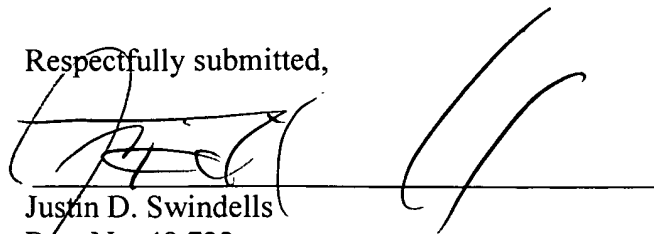
It is the Applicants' belief that all of the claims are now in condition for allowance and action towards that effect is respectfully requested.

If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at the number indicated.

A fee for a two-month extension of time is submitted herewith. No additional fees are believed to be due, however, the Commissioner is authorized to charge any additional fees which may be required (except the issue fee) to Jenkins & Gilchrist, P.C., Deposit Account No. 10-0447 (47161-00016USPT).

Date: August 8, 2005

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Justin D. Swindells', is written over a horizontal line. To the right of the signature, there is a large, stylized handwritten mark that resembles a checkmark or a large '1'.

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Fig. 1
Prior Art

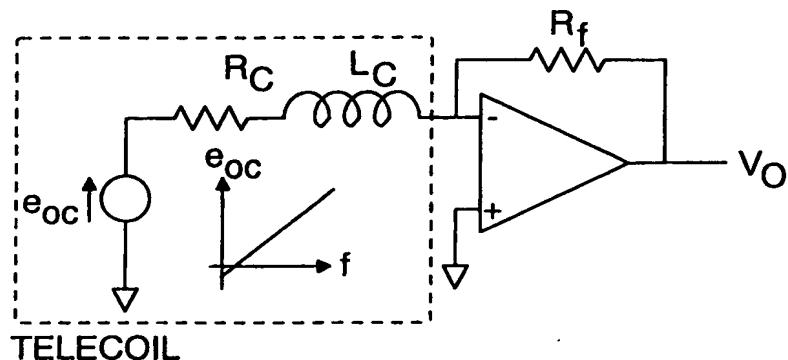


Fig. 2

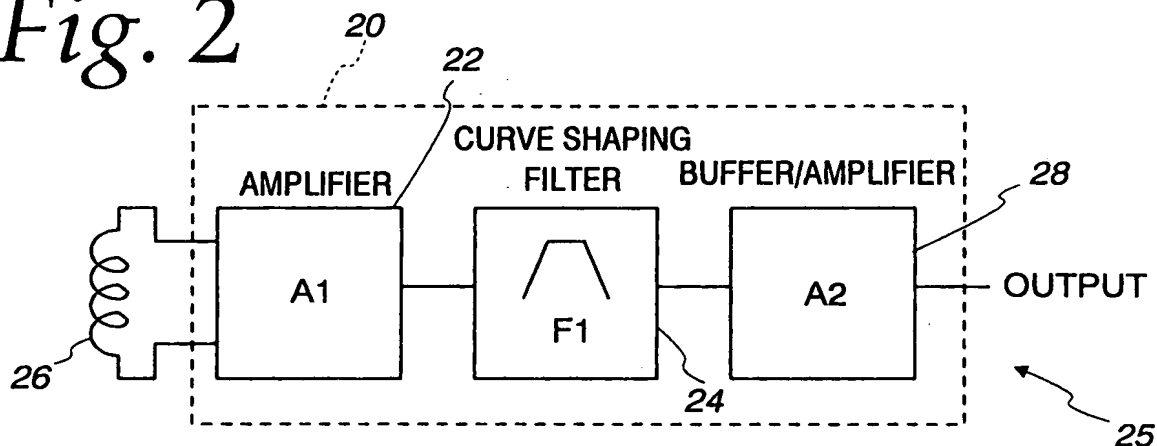


Fig. 3

